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REMARKS

Applicant appreciates the consideration shown by the Office, as evidenced by the Office Action, mailed on February 10, 2003. In that Office Action, the Examiner rejected Claims 1-27. Claims 28-56 have been withdrawn from consideration, and Claims 2 and 13 have been canceled, without prejudice, in the present Amendment. As such, Claims 1, 3-12, and 14-56 remain in the case with none of the claims being allowed.

The February 10 Office Action has been carefully considered. After such consideration, Claims 1 and 12 have been amended and Claims 2 and 13 have been canceled, without prejudice. Applicant respectfully requests reconsideration of the application by the Examiner in light of the above amendments and the following remarks offered in response to the February 10 Office Action.

Election/Restriction

The Examiner has required an affirmation of the January 16, 2003, provisional election by Applicant's counsel of Group I (Claims 1-27) with traverse. Applicant hereby affirms the election with traverse. MPEP §803 explicitly states: "If the search and examination of the entire application can be made without serious burden, the examiner *must* examine it on the merits even though it includes claims to independent or distinct inventions." Applicant submits that the search and examination of fused quartz article and a method of making said fused quartz article do not impose a serious burden upon the Examiner, and that the entire application should be examined on the merits.

Claim Objections

The Examiner has objected to Claims 7, 15, and 24 as being of improper dependent form for failing to further limit the subject matter of a previous claim. The Examiner has required that the claims be canceled or amended to place them in proper dependent form.

Applicants submit that the claims objected to by the Examiner properly limit the claims from which they each depend. Claim 7, which recites the limitation of a coating thickness from about 500 nm to about 5 microns, depends from Claim 6, which recites a coating thickness from

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about 50 nm to about 5 microns. The range from about 500 nm to about 5 microns presented in Claim 7 is a narrower range than that recited in Claim 6. Applicants therefore submit that Claim 7 further limits the subject matter of the claim from which it depends. Similarly, Claims 15 and 24 further limit the subject matter of the claims from which they respectively depend. Applicants therefore submit that the objection to Claims 7, 15, and 24 is successfully overcome.

Rejections under 35 U.S.C. §102

Claims 1, 3-5, 9-12, and 17-18 have been rejected under 35 U.S.C. §102(b) as being anticipated by Hansen et al. (U.S. Patent 5,976,247).

Applicants submit that independent Claims 1 and 12 have been amended to include the limitation that the fused quartz article is transparent to visible light.

Applicants respectfully submit that, in order to anticipate under §102, a reference must teach every aspect of the claimed invention. Accordingly, Applicants submit that Hansen et al. do not teach all of the limitations of amended Claims 1 and 12. As the Examiner states in paragraph 11 of the February 10 Office Action, Hansen et al. do not disclose the limitation that the fused quartz article is transparent to visible light. Applicants therefore submit that, because the reference does not teach every aspect of the claimed invention, the rejection of independent Claims 1 and 12, and the claims dependent thereon, under 35 U.S.C. §102(b) as being anticipated by Hansen et al. is successfully overcome.

Rejections under 35 U.S.C. §103(a)

Claims 2, 6-8, 13-16, and 19-27 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Hansen et al. in view of Baumler et al. (U.S. Patent 4,102,666) and in further view of Loxley et al. (U.S. Patent 4,072,489).

As previously presented, independent Claims 1 and 12 have been amended to include the limitation that the fused quartz article is transparent to visible light. Independent Claim 19 also includes this limitation.



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The Examiner states in part that Loxley et al. is used to show that it is commonly known in the art to show that crucibles when made from high purity quartz can be made transparent.

Applicants respectfully submit that, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Accordingly, Applicants submit that the combination of Hansen et al. and Baumler et al. with Loxley et al. as proposed by the Examiner would destroy the principle of operation of all three references.

Applicants submit that both Hansen et al. and Baumler et al. teach the *promotion* of devitrification and formation of cristobalite crystals in crucibles, whereas Loxley et al. teach the *avoidance* of devitrification to achieve transparency. Hansen et al. state in column 3, lines 39-43: "...crystal seed nuclei form at these nucleation sites and the vitreous silica at the crucible surface crystallizes, forming a substantially uniform and continuous devitrified shell of β -cristobalite on the surface of the crucible." See also column 2, line 60, to column 3, line 5, of the reference. Baumler et al. in column 8, lines 1-4, state: "In the present invention, rather than attempt to prevent or retard devitrification, the formation of crystalline silica is promoted..." See also, for example, the Abstract; column 2, line 64, to column 3, line 4; column 5, lines 3-12; and column 6, lines 7-26, of the reference. In contrast to Hansen et al. and Baumler et al., Loxley et al. teach the avoidance of devitrification damage due to the formation of cristobalite crystals. See, for example, column 1, line 64, to column 2, line 55, of the reference. Applicants therefore submit that combining Loxley et al., which teach that devitrification and cristobalite growth be avoided, with Hansen et al. and Baumler et al., which both teach the promotion of devitrification and cristobalite growth, would destroy the principles of operation of the latter two references. Conversely, the combination of Hansen et al. and Baumler et al. with Loxley et al. would destroy the principle of operation of the latter reference by introducing devitrification and cristobalite promoters to a crucible whose transparency is provided by minimizing such devitrification and cristobalite formation.

Applicants further submit that in order to establish a *prima facie* case of obviousness, there must be some suggestion or motivation to modify the references or to combine reference

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teachings. The requisite suggestion or motivation must come from the references themselves, rather than from the Applicants' specification. Obviousness cannot be established by locating references that describe various aspects of a patent applicant's invention without also providing evidence of the motivating force that would impel one skilled in the art to do what the patent applicant has done.

Accordingly, Applicants submit that there is no motivation or suggestion to combine the crucibles of Hansen et al. and Baumler et al. with the transparent quartz of Loxley et al. Neither Hansen et al. nor Baumler et al. provide any suggestion or teach the desirability that the crucibles disclosed therein be transparent. As previously presented, no incentive to provide an outer coating comprising cations that promote growth of the cristobalite crystals is provided by Loxley et al. In fact, the reference teaches away from promoting such cristobalite growth.

Applicants therefore submit that, because the combination of references proposed by the Examiner would destroy the principles of operation of the individual references and there is no suggestion or motivation to combine the references, the rejection of the claims under 35 U.S.C. §103(a) as being unpatentable over Hansen et al. in view of Baumler et al. and in further view of Loxley et al. is successfully overcome.

In light of the amendment and remarks presented herein, Applicant submits that the case is in condition for immediate allowance and respectfully requests such action. If, however, any issues remain unresolved, the Examiner is invited to telephone the Applicant's counsel at the number provided below.

Respectfully submitted,



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